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Electrification Sustainability Program In South Sudan (ESP)

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Quarterly Report

October 1 – December 31, 2013

**NRECA International Ltd.
January 31, 2014**

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Contents

List of Terms and Acronyms	ii
Introduction.....	3
Background.....	3
ESP Objectives	3
Project Team.....	4
South Sudan Government Activity	4
Political Turmoil and Departure from South Sudan.....	4
Meeting with Western Equatoria State (WES) Minister of Physical Infrastructure	5
Program Activity Summary	5
Task I – Technical and Financial Sustainability Support for Kapoeta, Maridi and Yei Electric Utilities	5
Current and Short Term Strategic Management of ESP and Completion of Program Tasks.....	5
Hiring of New Managing Director at KAPECO	6
Customer Information System (CIS) and Accounting Workshops / Mentoring Activity	6
Warehouse and Inventory Management Program	7
Quarterly Utility Operations Report.....	8
Evaluation of Opportunities to Improve Utility Long-Term Sustainability of the Utilities	9
Utility Diagnostic Evaluation of MECO and YECO.....	10
Financial Evaluation of KAPECO and MECO	11
Task II – Yei, Maridi Hybrid Micro-Hydro Capacity.....	11
Task III - Utility Evaluation and Development Support for Yambio	11
Other ESP Support Activities	12
Reimbursement Payments to Utilities	12
USAID Activity.....	12
Meeting with CrossBoundary	12
Transfer of Utility Plant Assets	12
Local Training Partners	13
South Sudan Energy Sector Workshop in Juba.....	13
Project Employee Travel In / Out of Country	13
Key Issues and Challenges / Opportunities	14
Major Events – Upcoming Activity.....	14
Financial	15
Process Indicators	18
Output Indicators	20
Outcome Indicators.....	22
Impact Indicators	24

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

List of Terms and Acronyms

CIS	Customer Information System
COP	Chief of Party
DCOP	Deputy Chief of Party
ECMP-3	Electronic Module Component Panel-Model 3
ESP	Electrification Sustainability Program
RSS	Republic of Southern Sudan
KAPECO	Kapoeta Electric Company
LBG	The Louis Berger Group
MECO	Maridi Electric Company
NGOs	Non-Government Organizations
NRECA	National Rural Electric Cooperative Association
SSREP	South Sudan Rural Electrification Project
SISP	Sudan Infrastructure Service Project
SUWASA	Sustainable Water and Sanitation in Africa
USAID	United States Agency for International Development
WES	Western Equatorial State
YECO	Yei Electric Cooperative

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Introduction

Background

Since 2005, the U.S. Government has provided ongoing infrastructure and institutional support to strengthen power sector planning throughout South Sudan, and to initiate or improve service delivery in Kapoeta, Maridi, Yei and Juba. Under the South Sudan Rural Electrification Project, USAID financed design and construction of a small generation-distribution utility in Yei that has evolved into a self-sustaining municipal electric cooperative serving approximately 1,200 consumers. Thereafter, USAID financed construction of two additional market town electrification projects in Kapoeta and Maridi; these two systems began commercial operations in April, 2011 and serve approximately 500 customers – households, commercial enterprises, public institutions and NGOs – in each community.

The challenges these small utilities face are similar but not identical. In the case of Yei, the utility commercializes enough electrical energy to cover all operating expenses and has managed to finance corrective and preventative maintenance costs for the past four years. However, the staff turnover has been high, and management still requires support to achieve long-term institutional and financial sustainability.

The two nascent utilities in Kapoeta and Maridi have not yet connected enough consumers nor do they sell enough electricity to achieve financial sustainability. The cost of generated energy is quite high, house wiring costs are still high, and there simply has not been enough time to connect enough consumers to reach a break-even point between operating costs and revenues. In both cases, there is also a need for ongoing training and mentoring for the boards of directors, the management, and employees who work at both utilities.

The Electrification Sustainability Program (ESP) has been designed to address the needs of all three utilities, as well as to undertake hydroelectric studies in Yei and Maridi (should additional funding become available), and to support Western Equatoria State (WES) and the Republic of South Sudan (RSS) to initiate planning for utility formation in Yambio.

This report covers the period October 1 to December 31, 2013. It summarizes ESP activities, challenges and accomplishments during the reporting period and identifies action items that will need to be addressed by NRECA International as well as issues that may require USAID attention.

ESP Objectives

The ESP is designed to support the process of achieving long-term sustainability for the electric generation-distribution utilities in Kapoeta (KAPECO), Maridi (MECO) and Yei (YECO) and to initiate utility formation in Yambio.

The program assistance will result in generation-distribution utilities that have well-established business systems and staff that are trained to manage the business systems without external oversight; to have a technical team with the capacity to manage the day-to-day operating challenges of small, islanded, vertically integrated electric utilities, including power plant management and the operation and maintenance of the distribution system.

A second project objective is to complete pre-feasibility studies to explore the potential for development of micro- and small-hydro generation near Maridi and Yei in order to reduce the cost of power supply to MECO and YECO. In the event that USAID decides to pursue these investments, the ESP program includes an option to review the feasibility of these investments and oversee the completion of final design of micro/small hydroelectric projects as proposed.

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

The third project objective is focusing on completion of an institutional and technical evaluation of the incomplete Yambio electric generation-distribution system. The ESP team will engage in a comprehensive evaluation of the engineering and construction requirements to energize the generation-distribution system, and will evaluate management options to achieve sustainable operation of the utility in collaboration with WES leadership and technical-administrative staff.

Project Team

The NRECA project team assigned to support ESP includes the following team members, by position:

Person	ESP Duties	Tenure
Robert O. Ellinger	Chief of Party	Full Time
Swalleh Rajab	Senior Commercial Utility Advisor	Full Time
James VanCoevering	Electrical Engineer	Part Time
Janet Kauffman	Deputy Chief of Party	Part Time
Md. Nazrul Islam Md. Tajul Islam	Customer Information System (CIS) Specialist	Contracted-Part Time
Jerry Rodgers John Padilla	Lineman Training Specialist	Contracted-Part Time
Eldon Stanley	Power Generation Specialist	Contracted-Part Time
Gregory Boudreaux	Board Development Specialist	Contracted Part Time
Kent Wick Sam West	Utility Finance Specialist	Contracted Part Time
Laban Kariuki	Utility Planning Specialist	Contracted Part Time

Additional support is being provided by the NRECA International Foundation organizing volunteer services of U.S. line workers from NRECA member cooperatives in the United States. NRECA International Foundation contributions are being managed by the Foundation Program Manager and Foundation Program Assistant.

South Sudan Government Activity

Political Turmoil and Departure from South Sudan

Due to the deteriorating security situation in South Sudan, Bob Ellinger (Chief of Party) and his wife Marie (who was visiting for the holidays) departed Juba on December 19th as directed by the U.S. State

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Department and USAID notifications. Swalleh Rajab (Senior Commercial Specialist) departed South Sudan for holiday travel on December 15th prior to the beginning of hostilities.

Meeting with Western Equatoria State (WES) Minister of Physical Infrastructure

On Thursday November 28th Bob Ellinger, ESP Chief of Party met the Honorable Clement Juma Mbugoniwia, WES Minister of Physical Infrastructure; Eng. Richard Miza, Director General; and David Nimeri, acting Director of Electricity. The discussion topics covered several issues of note including the status of the Yambio electric utility evaluation and the ensuing report to USAID along with the transfer of the Maridi electric utility plant assets to WES. Regarding the electric utility evaluation report the Minister expressed his keen interest in receiving the report as soon as possible. He stated that following their review of the report and discussion with private investors WES plans to submit a proposal to USAID for support in the rehabilitation and expansion of the electric system. Bob emphasized NRECA's support of the electrification of Yambio and our belief that such a project will serve as a springboard to economic development in the agricultural rich WES.

Program Activity Summary

Task I – Technical and Financial Sustainability Support for Kapoeta, Maridi and Yei Electric Utilities

Current and Short Term Strategic Management of ESP and Completion of Program Tasks

During this time of uncertainty and heightened security NRECA plans are to support the operations of the utilities serving Kapoeta (KAPECO), Maridi (MECO) and Yei (YECO) as much as the current situation allows.

- Mule Moses the Program Accountant / Administrative Assistant is currently on site based in Maridi. He will continue to provide financial oversight, guidance and mentoring to the accounting, finance and management staff of Maridi Electric Company (MECO) on a daily basis. He will provide similar services to Yei Electric Cooperative (YECO) traveling to Yei regularly as long as travel between the two towns can be completed safely. Mule will also provide guidance and mentoring to the staff of Kapoeta Electric Company (KAPECO) via cell phone and electronic communication.
- Swalleh Rajab the project's Senior Commercial Specialist is currently working from his home base in Uganda and is maintaining regular verbal and electronic communications with the staffs of all three utilities. Swalleh has extensive utility operations experience and is providing guidance and mentoring to the board, management, accounting, financial and operations staffs of the three utilities. Swalleh plans to return to South Sudan in late January (to be based in either Maridi or Yei) when travel between the two countries is deemed safe.
- Bob Ellinger, Chief of Party, will provide direction to Mule and Swalleh while maintaining verbal and electronic communications with the board and management at all three utilities. He will provide overall project management and monitoring activities and remain the project contact for USAID. Bob will perform these duties on a part-time basis from the United States until such time as the political situation normalizes and his return is cleared by USAID.

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Hiring of New Managing Director at KAPECO

Swalleh and Mule observed the interviews for the Managing Director position at KAPECO and during the interviews a strong candidate emerged. Following the interviews an offer was extended to George Okidi Okot from Uganda. Mr. Okidi Okot accepted the offer and reported to work Monday, November 18th.

Mr. Okidi Okot earned his BS Degree in Accounting from Gulu University in Uganda. Prior to joining the utility he worked for the AVIS foundation as education program officer responsible for all activities including management, finance and accounting. We welcomed Mr. Okidi Okot to KAPECO and ESP.

Swalleh held an introduction / orientation training for Mr. Okidi Okot. This training focused on the history of USAID funded electrification projects in South Sudan including; Southern Sudan Rural Electrification Project (SSREP), Sudan Infrastructure Services Project-Market Town Electrification (SISP) including the formation of KAPECO and the current program - The Electrification Sustainability Program in South Sudan (ESP). Swalleh also introduced the new managing director to the CIS and utility accounting / reporting.

Customer Information System (CIS) and Accounting Workshops / Mentoring Activity

Swalleh Rajab, ESP Senior Commercial Specialist continued to train both Mule Moses the recently hired ESP program Accountant/Administrative Assistant and Ajonye Asina the newly hired Assistant Accountant at KAPECO. The on the job training took place in Kapoeta and focused on utility operations, utility bill preparation, computation of the fuel cost adjustment (FCA), tracking fuel delivery and inventory, validation of bills received, the handling of daily cash receipts and disbursements, preparation and review of Form 1s, review of non-fuel operating expenses, posting of month end accruals, along with the handling of petty cash accounts.

Following CIS and Utility Accounting training held in Kapoeta, Swalleh and Mule traveled to Maridi and Yei to present the training program to MECO and YECO finance and accounting staffs. Formal classroom training covered a variety of topics including; account connection and disconnection, billing and cash collection, cash disbursement and transfers, accrual accounting, material / supply purchasing classification of various expenses and the need for proper filing and strict internal control measures. Following the discussions on the proper accounting procedures the focus of the training moved to capturing the various transactions in the CIS including cash disbursements, proper recording of the purchase and receipt of material including the handling of the related freight charges. The team also reviewed the proper accounting and posting in CIS for deliveries, payments and use of fuel.

Following the formal training sessions the instruction moved to the various offices where they focused on providing individual attention covering such topics as handling petty cash, correction of errors in petty cash expense classifications and proper filing for the related documents handled by accounting / finance staff each week. It was stressed that following the regular recording of the various transactions in CIS it is imperative to generate, review and evaluate the various system reports on a weekly / monthly basis.

The ESP team also worked with MECO management and staff to reorganize the duties and responsibilities of the commercial and finance departments.

Technical Assistance and Mentoring

The ESP team continues to provide daily oversight, guidance and mentoring on a variety activities, processes and procedures at all three utilities. As part of the mentoring process we provide ongoing oversight, guidance and review of daily practice and procedure. The mentoring process builds practical, day to day business skills based upon the foundation developed through the formal training programs being held. A few of the activities that took place in this reporting period included;

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

- Swalleh, Mule and Bob Worked with KAPECO board to hire a new managing director, assistant accountant and linemen trainees.
- Bob visited YECO October 17-19 to discuss current project activity. He attended the YECO Board meeting on Saturday, October 19th and presented information on the FY 2014 ESP work plan making special note of the training programs for the board, management and staff to be held at each utility.
- Bob worked with Maridi Electric Company (MECO) staff on two projects:
 - Bob worked with MECO to submit the final invoice for the final aid-to construction payment due from Tetra Tech for the three-phase line extension to the Maridi water treatment plant. Tetra Tech was a major contributor to the project.
 - Completed a contribution to construction estimate for the extension of a single-phase line to the Chaima Christian Institute.
- We are working with the staffs of all three utilities in collecting data for the development of budgets for 2014. Once the historical data has been collected a workshop will be held at each utility to develop a proposed budget for board review and approval.
- Bob worked with NRECA engineers and the three utilities completing the preliminary steps for the procurement of utility poles. The idea is to pool the utility needs and resources to order the poles necessary to obtain the best pricing and ensure a high measure of quality control. Initial contacts were made to a pole supplier and transport companies to obtain pricing and delivery information. The poles will be required to meet NRECA specifications for wood poles in East Africa.
- Swalleh reviewed the Environmental Mitigation & Monitoring Plan (EMMP) checklist and activities with the MECO employee designated to lead the evaluation for the utility. The checklist is to be completed over the next two weeks and presented for review.
- Mule worked with the MECO on several projects including: creating personnel files for all the employees and proper filing of contracts and personal information; updating the social security fund (SSF) amounts for each employee; guiding the accountant and cashier on the proper billing of customers; and, providing assistance to the commercial manager in completing the Form 1s for September through November.
- Mule visited YECO to work with the staff on several projects including: confirmation that correct posting of petty cash expenses in CIS; the proper filing of all receipts and support documents; and, the confirmation of the YECO employee's social security fund calculations. He also worked with the finance and administration manager to ensure that all expenses had been posted through November and that staff had established a procedure to post expenses in CIS on a daily basis (as instructed by the ESP team). Mule also reviewed the draft budget proposal being developed by the general manager and the finance / administration staff. Included in the review was an examination of the budgeted revenue including sales projections for each rate classification

Warehouse and Inventory Management Program

In April 2013 we completed an assessment of the warehousing practices and material handling at each utility. From the ensuing report we developed a workshop to review the results of the assessment with each utility and provide the management and staff with the tools necessary to improve their current operations.



Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Nick Allen, Electrical Engineer led the assessment and returned in December to kick off the training workshops at Kapoeta Electric Company (KAPECO). He was joined in the program by Swalleh Rajab, ESP Senior Commercial Operations Specialist. Following the kickoff of the training in Kapoeta the team traveled to Yei and Maridi to hold the workshops for YECO December 9-11, and MECO December 12-13.

The workshops began with a review of the initial assessment and covered the following topics:

- The need to track inventory, the need establish written policy on warehouse and inventory management and the expected results
- Discussion of warehouse and inventory management best practices which included posters/guides
- The need to complete a physical count of the inventory on a quarterly basis using someone other than the warehouse manager

Various templates and forms were provided as part of the workshop and included a warehouse and inventory manual and warehouse cleaning checklist. The workshop sessions also included presentations on improving the procurement of supplies and materials including joint purchasing and material trading among utilities.



Seven (7) members of the KAPECO staff attended including the managing director, assistant accountant, cashier, distribution manager, generation manager, lineman and the mechanic / plant operator. Six (6) members of the YECO staff attended the workshop in Yei including the general manager, technical manager, IT staff, accounting and finance assistant, technical supervisor, and power plant supervisor. Eight (8) staff members of MECO attended the workshop in Maridi including the managing director, warehouse manager, accountant, cashier, commercial manager, line crew manager, mechanic and plant operator. All three sessions began with words of encouragement and support provided by the respective board chairman.

Quarterly Utility Operations Report

The utility operations report provides quarterly performance monitoring and measuring indicators established to contribute to the understanding of good business practices.

Key performance indicators for the Beginning of the program and following the first year (December 2012 and December 2013)

Key Performance Indicators	KAPECO		MECO		YECO**	
	2012	2013	2012	2013	2012	2013
Services in Place	384	494	480	581	1,100	1,270
New Connections	-	110	-	101	-	170
Percentage Increase in Connections (Year)	-	28.6%	-	21%	-	15.5%
System Peak (kW) Y-T-D	135	157	97	196	527	466

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Key Performance Indicators	KAPECO		MECO		YECO**	
	2012	2013	2012	2013	2012	2013
Generator Efficiency (kWh/Liter)	2.67	2.80	2.83	2.84	2.83	3.31
Percentage Increase/Decrease in Generator Efficiency-Quarter	-	4.9%	-	0.4%	-	16.96%
Average Run Hours per Day***	13	13	16	16	17	17
Outages (Year)	-	4	-	7	-	10
Outage Hours per Consumer Year to Date	-	6.569	-	.4616		9.99

** Numbers for YECO are estimates from data submitted.

*** The average run hours per day were sharply reduced following the beginning of hostilities in mid-December.

Key issues and activities at the utilities:

KAPECO

- Generators 01 & 02 were serviced with engine oil along with oil and fuel filters changed
- Generator radiators and air filters cleaned
- Shortage of materials (poles & wire) limiting utility's ability to connect new consumers
- Substation maintenance and right-of way clearing taking place
- Hired two new linemen and gateman from local community (tribe)

MECO

- Generators 01 & 02 were serviced with engine oil along with oil and fuel filters changed
- Generator radiators and air filters cleaned
- Right-of-way inspection and tree trimming underway
- Purchased an off-loading hose to be used to unload fuel

YECO

- All generators are running following overhaul of generator #2 and a thorough cleaning of cooling systems including radiators
- General cleaning of power house and generator compound including slashing of grass
- Extending primary and secondary lines to serve areas with projections of 630 new customers

Evaluation of Opportunities to Improve Utility Long-Term Sustainability of the Utilities

NRECA believes that lowering the cost of energy supply in each of these utilities is of paramount importance to achieving and maintaining institutional and financial sustainability. Lower generation costs will support lower electric rates rendering affordable electric service to a larger client base. Increasing consumer connections and electricity sales will provide the revenue necessary to sustain the organizations and serve as a springboard to increased economic development opportunities in the agricultural rich Equatoria States of South Sudan.

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

During this quarter NRECA completed several tasks exploring opportunities to improve utility operations and reduce the cost of electric generation.

- NRECA undertook an evaluation of the nexus of energy use in support of agricultural production and food security. As part of this evaluation a survey was undertaken in Maridi evaluating to what extent MECO commercial consumers were engaged in agricultural production, agricultural processing, food production, food storage and food transport activities. The survey supported the hypothesis that a reduction in cost and expansion of electric service will provide a profound impact on improving food security. The report; “Electrification and Agriculture: Linkages to Food Security in South Sudan” was submitted to USAID in October.
- In October NRECA engineer Serge Khalife completed an analysis of introducing a hybrid solar-diesel generation system for Maridi. While the analysis was site-specific for Maridi, we project that similar results can be expected for Kapoeta. The final report presented the results of the evaluation and a projection of the financial savings that will occur if the investment in a solar-diesel generation systems.
- In November NRECA reviewed ESP Task #2 which remains unfunded for continued viability. Task #2 will build upon prior micro-hydro studies at Yei and Maridi which have identified three sites with the potential to supply lower cost electric power to both utilities. The next step to be taken is for the ESP engineering team to conduct feasibility studies and preliminary design work at one or more of the sites as advised by USAID.
- Throughout the year NRECA examined the financial positions of KAPECO and MECO. The review of the accounting procedures and financial position revealed that, MECO in particular and to a lesser extent, KAPECO are still struggling to correctly categorize expenditures in the appropriate accounting categories, and to prepare accurate financial reports. The evaluation also highlighted the utilities’ inability to generate the revenue needed to cover operating expenses.

While the utilities have developed financial strength and stability plans which included increasing rates (revenue) and reducing expenses it is apparent that additional financial assistance is needed in support of the utilities’ transformation from a construction projects to stand-alone, financially viable businesses.

These evaluations led to the submittal of three reports focused on improving the long-term sustainability of the utilities serving Kapoeta, Maridi and Yei by reducing their cost of electric generation and maintain cash flow at KAPECO and MECO. The reports included estimates on the funding required to carry out the interventions recommended.

Utility Diagnostic Evaluation of MECO and YECO

Bob, Swalleh and Mule joined together to perform the utility diagnostics at MECO and YECO. Janet Kauffman contributed by reviewing the utilities’ financial reports to provide the most up to date status on the financial conditions at each utility. The diagnostic evaluation explored the enterprise functionality at each utility and will be followed by presentations of the results to the utility boards and management staff. The assessments were conducted by direct interviews with board members, management and staff along with field observations made throughout each utility’s compound and service area. The assessment included an evaluation of general management proficiency; business administration functions including accounting, financial management, commercial management and human resource systems along with the operations and maintenance functions of the generation and distribution plant, and other ancillary activities. This annual assessment provides objective information regarding improvements made to business operations and financial standing of each utility as compared to the baseline performance

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

established last year during program implementation. The evaluation will also help determine the specific capacity building needs of each utility. The diagnostic evaluation for KAPECO will be completed in the near future.

Financial Evaluation of KAPECO and MECO

As we approached the end of the year we began a follow-up to the initial financial evaluation of KAPECO and MECO completed in May. This evaluation examined the financial status of the utilities following the recent base rate increase and will further explore the general ledger and Form 1s for inconsistencies in the reporting of expenses resulting in an incomplete view of the financial position of the utilities. Sam West, Financial Specialist is leading this effort and hosted several conference calls to discuss the proper and expanded use of the Customer Information System (CIS).

Task II – Yei, Maridi Hybrid Micro-Hydro Capacity

A second project objective is to complete pre-feasibility studies to explore the potential for development of micro- and small-hydro generation near Maridi and Yei in order to reduce the cost of power generation to MECO and YECO. At the current time this task has yet to be funded by USAID; however, NRECA has proceeded to move forward and complete a study evaluating the installation of diesel / solar hybrid generation systems at KAPECO and MECO. The installation of the diesel / solar hybrid systems and the commitment to the exploration of the mini-hydro options will require additional funding by USAID and NRECA has submitted a proposal for consideration.

Should the renewable energy component of ESP receive funding, NRECA recommends that these activities be fast-tracked to allow the utilities to avail of lower cost energy at the earliest possible date. Providing lower cost energy will have an immediate and lasting impact on self-sufficiency for each utility that enjoys this option.

Task III - Utility Evaluation and Development Support for Yambio

The third project objective is focusing on completion of an institutional and technical evaluation of the incomplete Yambio electric generation-distribution system. During the months of August and September Bob joined Serge Khalife, Engineering Specialist and Laban Kariuki, Utility Planning Specialist in traveling to Yambio to perform the evaluation of the current, non-operating electric utility system. The ESP team engaged in a comprehensive evaluation of the engineering and construction requirements to energize the generation-distribution system, and evaluate management options to achieve sustainable operation of the utility in collaboration with Western Equatoria State (WES) leadership and administrative-technical staff.

The Power System and Institutional Assessment Report for the Western Equatoria State Capital of Yambio was completed and submitted to USAID. The assessment examined the improvements and expansion needs of the generation and distribution plant previously constructed but never placed into commercial operation. The assessment also included a review of the institutional options available to satisfy the goals of a possible public-private partnership to manage both power generation and commercialization of electric service. The estimated cost to rehabilitate the system is \$1.6 million while the institutional support program, which would be a multi-year effort, is estimated to cost from \$3.85 million for three (3) years while the five (5) year total would be \$5.78 million.

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Other ESP Support Activities

Reimbursement Payments to Utilities

Payments to Kapoeta and Maridi Utilities for reimbursement of non-fuel operating expenses were made following a thorough review of the financial and accounting records including monthly financial reporting documents (CIS Form 1s).

Utility	October	November	December	Quarter Total	FY-T-D
KAPECO	\$ 0	\$35,795	\$0	\$ 35,795	\$ 35,795
MECO	\$28,500	\$8,700	\$0	\$ 37,200	\$ 37,200
				\$ 72,995	\$ 72,995

USAID Activity

Submission of Year-End Report - During the month of October the ESP FY 2013 year-end report was submitted to USAID. The report presented program highlights for the fiscal year including project financial information along with providing information on fourth quarter activities. The report included an update on the process, output, outcome and impact indicators along with including a success story. The ESP program enjoyed a successful first year and while we made a positive impact on the performance of the utilities the progress is slow and there is still much more than needs to be done. NRECA looks forward to working with USAID in making additional advances toward the overall success of the electrification program in the Equatorial States of South Sudan.

Approval of ESP Fiscal Year 2014 Work Plan – The FY 14 work plan was reviewed and approved by USAID on October 29. A meeting to discuss the activities in the work plan along with the previously mentioned reports and a proposal for additional funding for ESP is scheduled for November 18th.

Activity and Program Personnel Reports Provided During Time of Political Unrest – NRECA is providing USAID with regular updates on program activities and location / movement of program personnel.

Meeting with CrossBoundary

On Tuesday, November 19th Bob met with Thomas Flahive and Megan Larcom of CrossBoundary a firm under contract to USAID to facilitate private investment in South Sudan. CrossBoundary's secondary task is to work with the Republic of South Sudan and the country's financial institutions to build capacity in the local investment community. John Piggott of USAID also participated in the discussion.

Discussion topics included; the sharing of information on the three ESP utilities, possible investment opportunities in the electricity sector, privatization of the South Sudan Electric Company (SSEC), and proposed projects to provide electric service to Juba. Information was shared regarding the South Sudan Investment Conference scheduled for December 4-5 in Juba.

Transfer of Utility Plant Assets

Swalleh traveled to Torit and met with the Director General and Director of Electricity - Eastern Equatoria State (EES) Ministry of Physical Infrastructure in regard to the status of the agreement to transfer the Kapoeta electric utility plant assets to EES and the MOU for operation and maintenance with KAPECO. During the meeting Swalleh discovered the following;

- The name of the Ministry has been changed to the State Ministry of Physical Infrastructure
- A new Minister, the Hon. Hassan Urbano Alex has been appointed

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

- A new Director General (DG) has been appointed, Eng. Norman Charles Gideon

Following this initial meeting in early October Bob joined Swalleh, Moses and Stephen Okeny, Acting Managing Director of KAPECO in travelling to Torit to meet with the EES Ministry of Physical Infrastructure's Director General Eng. Norman Charles Gideon, Director of Electricity Leon Kale and the Ministry's Legal Advisor Dominic Edward Anikpara Dabira to review the transfer documents. The transfer agreement was signed but the MOU is still being negotiated between the parties. There are still a few items that need to be clarified and some minor modifications required prior to signing. The MOU must be agreed to and signed prior to submitting the full proposal documents to USAID for approval and final disposition of the assets.

Local Training Partners

Chaima Institute - During the initial year of ESP training program presentations a concern has come to the forefront – there is a question on the trainees' full comprehension and understanding of the English language.

- In an effort to improve the employees' knowledge and understanding of the English language we met with Patricia Wick of the Chaima Institute, a training center sponsored by the Episcopal Church in Maridi. A six-week Basic English course was presented to MECO employees beginning in September. Ten of the eighteen employees signed up for the program with eight completing the course. The graduates completed the course with an average grade of 80% - B. The instructor's general comments covering the class as a whole were very positive. She believed that all of the students improved in their use and understanding of the English language and, while several of the employees were somewhat timid at the beginning of the program she saw their self-esteem improve with a better understanding and use of the language.

We plan to build upon the success of the Maridi model to establish programs in Kapoeta and Yei using local training professionals / organizations. We also plan to explore expanding the program to include computer training and bookkeeping / accounting.

Ezentus - In October we continued our discussions with the staff of Ezentus (Caterpillar dealership in South Sudan) to discuss participation in their generator operator training programs. Discussions centered on course offerings in Juba along with Ezentus visits to the utility locations for on-site training. Information on the current gensets including their daily operation, weekly run times and maintenance schedules along with the number and education level of trainees was submitted to Ezentus to serve as the basis for a proposal to provide this critical training to the three utilities.

We believe that the use of local training partners will increase the comprehension of the trainees and encourage full participation in the training programs.

South Sudan Energy Sector Workshop in Juba

NRECA Senior Vice President Dan Waddle, Laban and Bob attended a workshop jointly sponsored by the Ministry of Electricity and Dams and the Norwegian Water Resources and Energy Directorate in Juba. Dan participated in the program by presenting information on NRECA International's contribution to the advancement of rural electrification in South Sudan highlighting our operational experience with the utilities in Kapoeta, Maridi and Yei. The workshop was very informative and well attended by government and industry officials.

Project Employee Travel In / Out of Country

Robert Ellinger, the ESP Chief of Party returned to the US on December 19

Swalleh Rajab, the ESP Senior Commercial Specialist returned to Uganda on December 15

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Key Issues and Challenges / Opportunities

Utility Systems in Torit and Yambio – While we have been actively involved in the evaluation and proposed rehabilitation of the utility in Yambio, we are now hearing that a development group from China is close to signing agreements with the Republic of South Sudan (RSS) to construct a mini-hydro facility and transmission line to serve Torit the capital of EES. In our discussions with the EES Director of Electricity he has mentioned the State's keen interest in working with NRECA and the donor community on the construction of the distribution network to serve the city.

Both of these towns are state capitals and serve as the commerce centers for Eastern and Western Equatoria. These projects offer an excellent opportunity to expand the electrification program which will provide a catalyst for economic development (including the agricultural sector) to improve quality of life and improve food security for the people of South Sudan.

Networking of Computers – We are currently evaluating the computer hardware systems at each utility. Unfortunately the current hardware limits use of the computer system to only one operator. This review will examine the benefits of networking the computers to improve access, time management and employee efficiency. We will also use this effort to identify possible computer technology partners for future training and business operations opportunities.

Current Political Climate and Return to South Sudan – NRECA is following the news reports from South Sudan and will maintain regular contact with USAID in an effort to plan a return to the country as soon as possible.

Major Events – Upcoming Activity

- Continuation of the utility day to day mentoring and CIS / accounting training at the utilities in Maridi and Yei
- Maintaining regular contact with all three utilities while providing USAID with regular updates on utility operations and the status of security in the service areas
- Re-evaluation of the 2014 Work Plan
- Following the signing of a ceasefire we are looking forward to a quick return to South Sudan

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Financial

Financial Status (as of end of reporting period - 12-31-2013)	
a. Project Start Date:	8/8/2012
b. Project Completion Date:	8/7/2015
c. Estimated Life of Activity (months):	36
d. Expired Life of Activity (months):	17
e. Total Estimated Cost:	3,870,000
f. Unilateral Obligation	3,594,000
g. Bilateral Sub-obligation	0
h. Total Obligation:	3,594,000
i. Mortgage (e-h):	276,000
j. Expenditures:	2,201,269
k. Pipeline as of end of reporting period (h-j):	1,392,731
l. Historical Monthly Burn Rate (j/d):	129,486
m. Average Monthly Burn Rate (Last Quarter):	115,628
n. Length of Pipeline in Months (k/m):	12.04
o. Cumulative Expenditures as % of Obligations:	61.25%

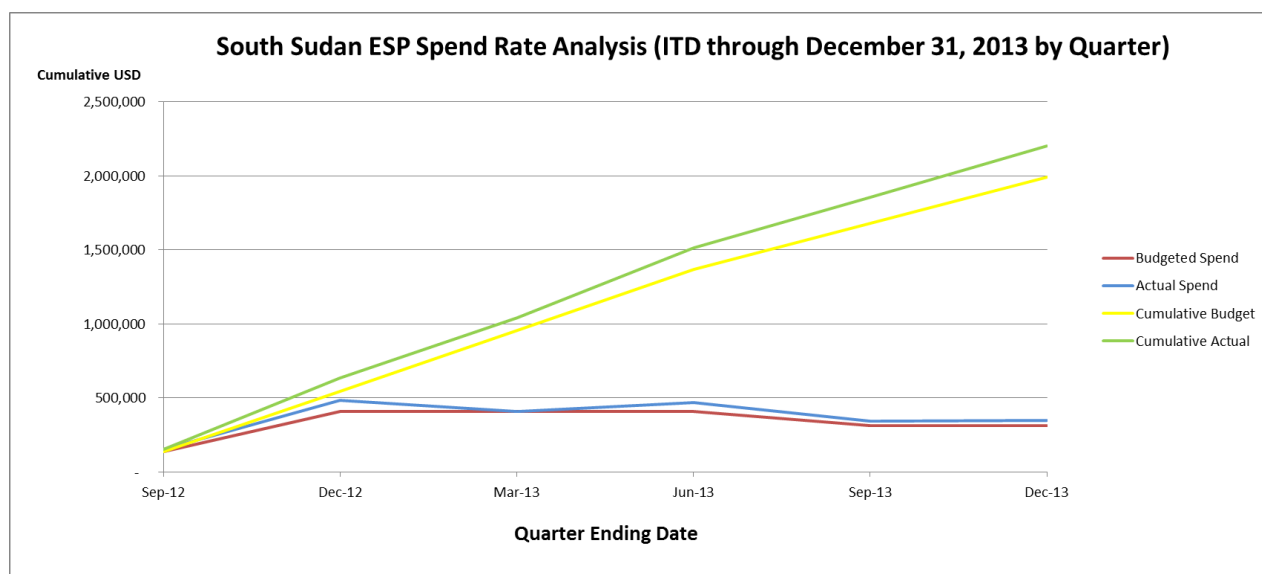
Spend Rate Compared to Budget (FY 2014)		
Month	Actual	Budget
October	161,823	104,315
November	128,123	104,315
December	56,939	104,315
Total	346,885	312,945

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Spend Rate Analysis and Graph

Quarter End	Actual Expenses	Budgeted Expenses	Cumulative Actual	Cumulative Budget
Sept. 2012	\$150,216	\$136,641	\$150,216	\$136,641
Dec. 2012	\$482,600	\$409,922	\$632,816	\$546,563
Mar. 2013	\$411,303	\$409,941	\$1,044,119	\$956,504
June 2013	\$469,120	\$409,922	\$1,513,239	\$1,366,426
Sept. 2013	\$341,145	\$312,946	\$1,854,384	\$1,649,372
Dec. 2013	\$346,885	\$312,946	\$2,201,269	\$1,992,318



Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Breakdown in Project Costs by Specific Element		
	Quarter	Project TD
Personnel	57,870	469,107
Fringe Benefits	30,158	241,358
Travel	14,643	148,226
Equipment	3,352	83,026
Supplies	2,439	6,655
Contractual	62,413	242,143
Other	31,736	161,569
Non-Fuel operating Costs	72,944	279,693
Indirect Charges	71,329	569,491
Totals	346,885	2,201,269

While project expenses have outpaced the budget such a spending pattern could be expected with frontend expenses being loaded with project startup costs including the purchase of a project vehicle and the influx of training programs in the early months of ESP. The major cost centers which are above budget include; personnel, contractual, travel and the reimbursement of non-fuel operating expenses. We expect all four of these areas to see a reduction in spending as the program matures as shown by the downward trend of expenses experienced over the past several months.

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Process Indicators

The table below shows the process indicators that will be used to track progress in the program as compared to initial benchmarks for all activities and tasks. The process indicators for the ESP program are drawn from the program work plan, in which completion milestones have been set for each Task within the three Activities of the program. More details on each Activity and Task are available in the ESP program work plan.

Workplan No.	Activities and Tasks	Milestones	Completion (Planned)	Completion (Actual)
1.0	Yei, Maridi, Kapoeta Technical & Financial Sustainability Support			
1.1	Review of year #1 benchmarks and progress	Evaluation of the utilities' financial and operation strength-weakness	20-Oct-2013	Delayed
1.2	Board training courses	Board members complete training courses	28-Feb-2014	
1.3	Board training courses	Board members participate in peer-to-peer sessions	31-July-2014	
1.4	Management Training – Budgeting	Utility managers and key staff complete training courses	30-Nov-2013	30-Nov-2013
1.5	Management Training – Finance	Utility managers and key staff complete training courses	31-Mar-2014	
1.6	Management Training – Human Resources	Utility managers participate in peer-to-peer sessions	31-May-2014	
1.7	Accounting and Financial Control Training	Utility financial and commercial staffs complete training courses	30-June-2014	
1.8	Commercial Management – CIS & Data Mgmt	Utility financial and commercial staffs complete training courses	31-May-2014	
1.9	Commercial Management – Meter Reading	Utility financial and commercial staffs complete training courses	30-June-2014	
1.10	Commercial Management – Revenue Cycle	Utility financial and commercial staffs complete training courses	31-July-2014	
1.11	Line worker safety training	Line workers complete training courses.	31-July-2014	
1.12	Power Generation Training	Power plant O&M training for plant operators and key staff	30-Sept-2014	
2.0	Yei, Maridi Hybrid Micro-Hydro Capacity			
2.1	Hydrology data and community coordination	Review completed.	TBD	
2.2	Civil engineering design	Design work completed	TBD	
2.3	Generation and substation design	Design work completed	TBD	
2.4	Power line interconnection design	Design work completed	TBD	
2.5	Cost estimates	RFQ completed	TBD	
2.6	Financial model	Modelling completed	TBD	
2.7	Report delivered	Design report delivered.	TBD	
2.8	Renewable Energy Evaluation	Exploration of the introduction of power generation alternatives	30-Oct-2013	30-Oct-2013
3.0	WES & Yambio Electric Utility Assistance			
3.1	Diagnostic fieldwork, initial recommendations	Fieldwork completed, report containing recommendations delivered.	30-Oct-2013	30-Oct-2013
3.1	Planning workshop with WES Government	WES participates in workshop.	30-Nov-2013	Delayed
3.2	Implementation of Follow-up Training Activity	Follow-on training activity implemented (TBD)	28-Feb-2014	Delayed

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Workplan No.	Activities and Tasks	Milestones	Completion (Planned)	Completion (Actual)
4.0	Program Management, Monitoring, Evaluation and Reporting			
4.1	Work Plan and MEP submitted	Annual work plan and MEP submitted to USAID	31-Aug-2013	31-Aug-2013
4.3	Work Plan and MEP revised	Revised work plan and MEP delivered.	24-Sept-2013	05-Oct-2013
4.4	Quarterly Progress Reports	Quarterly progress reports delivered within 30 days of end of quarter.	Jan, April and July 2014	31-Jan-2014
4.5	Project Final Report	Final project progress report delivered within 30 days of end of FY	Oct-30-2014	
4.6	Quarterly Financial Reports	Quarterly financial reports delivered within 45 days of end of quarter.	Feb, May and August 2014	
4.7	Year 3 - Workplan and MEP submitted	Year 3 – Work Plan and MEP submitted to USAID	31-Aug-2014	

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Output Indicators

Indicator No.	Indicator Name	Indicator Definition, Description, Data Source, and Discussion	Baseline (2012)	2013 Actuals	FY 2014 YTD T - A		Program Actuals
Output 1.0	Board training.	<p>Definition: Number of people receiving USG supported training in roles and responsibilities of electric utility board members.</p> <p style="text-align: right;">KAPECO 0 MECO 0 YECO 0</p> <p>Description: Total number of participants in electric utility board training sessions, disaggregated by gender and utility.</p> <p>Data Source: NRECA project reports.</p> <p>Discussion: This is an ESP indicator that closely resembles the USAID standard indicator for management training (see Output 2.0 indicator below). While this indicator is disaggregated by gender, the target is not disaggregated because the program has no influence over the gender of board members selected or elected in the three communities.</p>			M-F 6-1 6-1 6-1	M-F 	M-F 1-0 6-1 <u>6-0</u> 13-1
Output 2.0	Management training.	<p>Definition: Number of people receiving USG supported training in energy related business management systems.</p> <p style="text-align: right;">KAPECO 0 MECO 0 YECO 0</p> <p>Description: Total number of participants in utility management basic training, and administrative training, disaggregated by gender.</p> <p>Data Source: NRECA project reports.</p> <p>Discussion: This is a USAID standard indicator. While this indicator and reporting is disaggregated by gender, the target is not disaggregated because the program has little influence over selection of utility personnel in the three utilities, and therefore should not set a target as to their gender. Note that the management training and the administrative and financial training envisioned in the program have been combined into this one indicator.</p>			M-F 4-2 5-0 4-2	M-F 	M-F 4-2 4-0 <u>3-2</u> 11-4

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Indicator No.	Indicator Name	Indicator Definition, Description, Data Source, and Discussion	Baseline (2012)	2013 Actuals	FY 2014 YTD T - A		Program Actuals
Output 3.0	Electric lineworker training.	Definition: Number of people receiving USG supported training in electric line and power plant generation work.	0		M-F	M-F	M-F
		KAPECO	0	10-0	10-1		10-0
		MECO	0	10-1	10-1		10-1
		YECO	0	17-0	14-0		<u>17-0</u>
							37-1
		Description: Total number of participants in lineworker and power plant generation training, disaggregated by gender.					
		Data Source: NRECA project reports.					
		Discussion: This is an ESP indicator that closely resembles the USAID standard indicator for management training (see Output 2.0 indicator above). While this indicator and reporting is disaggregated by gender, the target is not disaggregated because the program has little influence over selection of utility personnel in the three utilities, and therefore should not set a target as to their gender.					

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Outcome Indicators

(Indicators No. 2-5 are based on year end 2012 figures-3 month lag)

Indicator No.	Indicator Name	Indicator Definition, Description, Data Source, and Discussion	Baseline (2012)	2013 Actual	FY 2014 YTD T - A		Program Total
Outcome 1.0	Improved electric service.	Definition: Number of beneficiaries receiving improved infrastructure services due to USG assistance.	7,400	1,364	440	548	1,912
		KAPECO	1,350	328	70	140	468
		MECO	1,550	636	90	128	764
		YECO	4,400	400	280	280	680
		Yambio	0				0
		Description: Total number of customers connected to the three primary beneficiary utilities (MECO, KAPECO and YECO), and to a potential new rural utility in Yambio, multiplied by four. This multiplier is used, rather than a higher number of average household size in South Sudan utilized in other analyses, because some of the electric service customers will be small commercial establishments rather than households. No attempt is made to count beneficiaries such as users of public lighting, beneficiaries of public institutions and NGOs, etc. The indicator therefore will provide a conservative estimate of beneficiaries of improved utility management and operations.					
		Baseline and targets determined following utility diagnostics (Nov-2012)					
		Data Source: NRECA project reports and utility records.					
		Discussion: This is a USAID standard indicator. In the ESP, this indicator is not disaggregated by gender because it will not be directly measured; i.e. the number of people with electric service will not be directly counted in each customer (household, commercial establishment, public institutions, etc.); therefore any gender disaggregation would be an estimate only.					
Indicator No.	Indicator Name	Indicator Definition, Description, Data Source, and Discussion	Baseline (2012)	2013 Actual	FY 2014 YTD T - A		Program Total
Outcome 2.0	Utility cost recovery.	Definition: Cost recovery index-(Indicators No. 2-5 are based on 2013 figures through September)					
		KAPECO	85%	92.7%	95.0%	87.4	92.7%
		MECO	75%	88.1%	90.0%	87.5	88.1%
		YECO (YECO Reports Incomplete)	66%	86.0%	88.0%	---	86.0%
		Description: This standard index will measure the commercial cycle efficacy of each utility (MECO, KAPECO and YECO) as the product of collection rates and losses for each utility. A utility with 95% collection rates and 10% losses would have a cost recovery index of 0.95 * 0.90 or 0.855.					
		Baseline and targets to be set following utility diagnostics (Nov- 2012)					
		Data Source: NRECA project reports and utility records.					
		Discussion: This is not a USAID standard indicator. Disaggregation by utility					

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Indicator No.	Indicator Name	Indicator Definition, Description, Data Source, and Discussion	Baseline (2012)	2013 Actual	FY 2014 YTD T - A		Program Total
Outcome 3.0	Utility expenditure management.	<p>Definition: O&M expenses per kWh sold, normalized for fuel costs. (Indicators No. 2-5 are based on 2013 figures through September)</p> <p style="text-align: right;">KAPECO MECO YECO (YECO Reports Incomplete)</p> <p>Description: The ratio of operation and maintenance expenses per period to kilowatt hours sold in the same period. This ratio will be normalized for variation in fuel costs to ensure that the indicator tracks utility management behavior and not variations in the fuel markets.</p> <p>Baseline and targets to be set following utility diagnostics.</p> <p>Data Source: NRECA project reports and utility records.</p> <p>Discussion: This is not a USAID standard indicator. Disaggregation by utility.</p>	<p>2.1 SSP</p> <p>1.9 SSP</p> <p>2.5 SSP</p>	<p>1.58 SSP</p> <p>3.26 SSP</p> <p>0.33 SSP</p>	<p>1.60 SSP</p> <p>1.90 SSP</p> <p>0.60 SSP</p>	<p>1.65</p> <p>1.94</p> <p>----</p>	<p>1.58 SSP</p> <p>3.26 SSP</p> <p>0.33 SSP</p>
Outcome 4.0	Utility operating margins.	<p>Definition: Operating margins per kWh generated. (Indicators No. 2-5 are based on 2013 figures through September)</p> <p style="text-align: right;">KAPECO MECO YECO (YECO Reports Incomplete)</p> <p>Description: The operating margins for each of the three utilities (MECO, KAPECO and YECO) will be tracked and reported. It should be noted that this indicator is <u>not</u> a proxy measure of effectiveness of the ESP program, since fuel costs and other variables in the economic context of each service territory will influence this metric, but it will still be a useful data set for USAID in considering the implications of its investments in utility start-up in South Sudan.</p> <p>Baseline and targets to be set following utility diagnostics.</p> <p>Data Source: NRECA project reports and utility records.</p> <p>Discussion: This is not a USAID standard indicator. Disaggregation by utility.</p>	<p>-1.1 SSP</p> <p>-1.3 SSP</p> <p>-1.5 SSP</p>	<p>-0.65</p> <p>-2.50</p> <p>-0.09</p>	<p>-0.88</p> <p>-1.04</p> <p>-1.2</p>	<p>-0.47</p> <p>-0.89</p> <p>----</p>	<p>-0.65</p> <p>-2.50</p> <p>-0.09</p>

Electrification Sustainability Program In South Sudan

Quarterly Report, October – December 2013

Indicator No.	Indicator Name	Indicator Definition, Description, Data Source, and Discussion	Baseline (2012)	2013 Actual	FY 2014 YTD T - A		Program Total
Outcome 5.0	Mgmt. Staff Turnover Percentage	<p>Definition: Management Staff Turnover Percentage (Indicators No. 2-5 are based on 2013 figures through September)</p> <p style="text-align: right;">KAPECO MECO YECO</p> <p>24% 0 % 100%</p> <p>24% 0% 6%</p> <p>6% 0% 10%</p> <p>0% 0% 0%</p> <p>24% 0% 6%</p> <p>Description: A high turnover of key management staff may be an indicator of internal strife and disruption within an organization. While there is little information on utility standards in this area comparisons can be made from project start (possibly a year or two prior) to end dates.</p> <p>Baseline and targets to be set following utility diagnostics. Data Source: NRECA project reports and utility records. Discussion: This is not a USAID standard indicator. Disaggregation by utility.</p>					

Impact Indicators

The ESP program will be focused on improving utility management and operations, and therefore will not track high-level impact indicators. However, while there is no direct correlation with project training activities to the indicator, an attempt will be made to measure the number of new businesses or expanded businesses connecting to the distribution grid during the project; possibly as a percentage of businesses receiving electric service from the distribution grid.

Indicator No.	Indicator Name	Indicator Definition, Description, Data Source, and Discussion	Baseline (2012)	2013 Actual	FY 2014 T - A		YTD Program Total
Impact 1.0	Number of new / expanded business connections.	<p>Definition: Number of new or expanded business connections (Impact Indicator is current through Quarterly Report period)</p> <p style="text-align: right;">KAPECO MECO YECO Yambio</p> <p># of Business 238 237 740 0</p> <p>66 57 45</p> <p>50 40 30</p> <p>21 19 29</p> <p>87 76 74 0</p> <p>Description: While there is no direct correlation between the project training and mentoring activities and the number of new businesses or expanding businesses receiving electric service, an attempt will be made to measure the number of new or expanded businesses connecting to the distribution grid during the project.</p> <p>Baseline and targets to be set following utility diagnostics. Data Source: NRECA project reports and utility records. Discussion: This is not a USAID standard indicator. Disaggregation by utility.</p>					